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Emergency Department Use among
Patients with CKD: A Population-Based
Analysis

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Abstract

Background and objectives Although prior studies have observed high resource use among patients with CKD, there is limited exploration of emergency department use in this population and the proportion of encounters related to CKD care specifically.

Design, setting, participants, & measurements We identified all adults (≥ 18 years old) with eGFR < 60 ml/min per 1.73 m² (including dialysis-dependent patients) in Alberta, Canada between April 1, 2010 and March 31, 2011. Patients with CKD were linked to administrative data to capture clinical characteristics and frequency of emergency department encounters and followed until death or end of study (March 31, 2013). Within each CKD category, we calculated adjusted rates of overall emergency department use as well as rates of potentially preventable emergency department encounters (defined by four CKD-specific ambulatory care-sensitive conditions: heart failure, hyperkalemia, volume overload, and malignant hypertension).

Results During mean follow-up of 2.4 years, 111,087 patients had 294,113 emergency department encounters; 64.2% of patients had category G3A CKD, and 1.6% were dialysis dependent. Adjusted rates of overall emergency department use were highest among patients with more advanced CKD; 5.8% of all emergency department encounters were for CKD-specific ambulatory care-sensitive conditions, with approximately one third resulting in hospital admission. Heart failure accounted for over 80% of all potentially preventable emergency department events among patients with categories G3A, G3B, and G4 CKD, whereas hyperkalemia accounted for almost one half (48%) of all ambulatory care-sensitive conditions among patients on dialysis. Adjusted rates of emergency department events for heart failure showed a U-shaped relationship, with the highest rates among patients with category G4 CKD. In contrast, there was a graded association between rates of emergency department use for hyperkalemia and CKD category.

Conclusions Emergency department use is high among patients with CKD, although only a small proportion of these encounters is for potentially preventable CKD-related care. Strategies to reduce emergency department use among patients with CKD will, therefore, need to target conditions other than CKD-specific ambulatory care-sensitive conditions.

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